

*Please provide the following information, and submit to the NOAA DM Plan Repository.*

**Reference to Master DM Plan (if applicable)**

*As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.*

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

**1. General Description of Data to be Managed****1.1. Name of the Data, data collection Project, or data-producing Program:**

Benthic Habitat Maps for Rose Atoll Marine National Monument in American Samoa from 2004 to 2010

**1.2. Summary description of the data:**

Benthic habitat maps for Rose Atoll, American Samoa were derived from high resolution, multispectral satellite imagery for 2004, 2006, and 2010. The benthic habitat maps for 2004 were previously generated by NOAA's NCCOS's BioGeography Branch before this project, and they were gathered from NOAA's 2005 publication (NCCOS, 2005). The benthic habitat maps for 2006 and 2010 were generated in this project. Bathymetry (water depth) from 0 to 30 meters was derived from satellite imagery for 2006 and 2010 and validated with multibeam and singlebeam depth data, respectively. Eight geomorphological features of the seafloor (Mean Depth, Standard Deviation of Depth, Slope, Slope of Slope, Rugosity, Curvature, Plan Curvature, and Profile Curvature) were derived from the bathymetry for 2006 and 2010. The geomorphological features were used to perform a Principal Component Analysis (PCA), and the first three Principal Components were used in combination with classified benthic imagery (underwater images of the seafloor) to classify the underwater habitat of the inner lagoon and sloping reef areas of Rose Atoll.

The final benthic habitat maps consist of two maps for each of the three years. The first map shows the four dominant cover types that make up the shallow water benthic habitat on Rose Atoll, which are coral, coralline algae, macroalgae, and turf algae. The area in square kilometers of each cover types is provided. The purpose of the first map is to show the most abundant biological cover types in the benthic habitat. The second map show the percentages of the four dominant cover types, which are divided into three bins: 10%-<50% coverage, 50%-<90% coverage, and 90%-100% coverage. The area in square kilometers of each of the cover types is also provided. The purpose of the second map is to examine the smaller changes in the benthic habitat over the three years.

**1.3. Is this a one-time data collection, or an ongoing series of measurements?**

One-time data collection

**1.4. Actual or planned temporal coverage of the data:**

2002, 2006-02 to 2006-03, 2004, 2010-03, 2009, 2006, 2010

**1.5. Actual or planned geographic coverage of the data:**

W: -168.18, E: -168.13, N: -14.52, S: -14.57

Rose Atoll is a diamond shaped coral atoll in the South Pacific Ocean. It is the easternmost island of the Samoan Archipelago and the southernmost U.S. protected area.

**1.6. Type(s) of data:**

*(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)*

Map (digital)

**1.7. Data collection method(s):**

*(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)*

Instrument: Not Applicable

Platform: Not Applicable

Physical Collection / Fishing Gear: Not Applicable

**1.8. If data are from a NOAA Observing System of Record, indicate name of system:****1.8.1. If data are from another observing system, please specify:****2. Point of Contact for this Data Management Plan (author or maintainer)****2.1. Name:**

Annette M DesRochers

**2.2. Title:**

Metadata Contact

**2.3. Affiliation or facility:****2.4. E-mail address:**

annette.desrochers@noaa.gov

**2.5. Phone number:**

(808)725-5461

**3. Responsible Party for Data Management**

*Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.*

**3.1. Name:**

Rhonda Suka

**3.2. Title:**

Data Steward

**4. Resources**

*Programs must identify resources within their own budget for managing the data they produce.*

**4.1. Have resources for management of these data been identified?**

Yes

**4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):**

Unknown

**5. Data Lineage and Quality**

*NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.*

**5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible**

*(describe or provide URL of description):*

Lineage Statement:

To create the benthic habitat maps showing Dominant Cover Types and Percentages of Dominant Cover Types of the shallow water benthic habitat of Rose Atoll for 2006 and 2010, the Maximum Likelihood Supervised Classification (MLC) tool in ArcGIS for Desktop was used to classify the three bands from the Principle Component Analysis (PCA) performed on the eight derived geomorphological features of the seafloor.

Process Steps:

- Bathymetry was derived for the shallow water area (0 to 30 meters) of Rose Atoll from the two multispectral satellite images (2002 and 2009) using ENVI and ArcGIS for Desktop tools.
- Eight geomorphological features of the seafloor were derived from the derived bathymetry from each of the two satellite images using ArcGIS for Desktop Spatial Analyst and 3D Analyst tools.
- A Principle Component Analysis (PCA) was performed on the eight derived geomorphological features using the PCA tool in ArcGIS for Desktop.
- The benthic habitat was classified in ArcGIS for Desktop using the MLC tool, the PCA raster data sets from the 2002 and 2009 satellite images, and the benthic images from towed-diver surveys.

**5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:**

**5.2. Quality control procedures employed (describe or provide URL of description):**

The satellite-derived water depths were validated against available multibeam and single beam bathymetry data for the years 2006 and 2010. Corrections for tide variation and vessel attitude are applied to the multibeam and single beam data, and a CTD (Conductivity, Temperature, and Depth instrument) cast is performed regularly during data collection to correct for variance within the water column. Multibeam and single beam data are tested for internal consistency; however, no effort is made to compare these data to external references or to other published data.

**6. Data Documentation**

*The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.*

**6.1. Does metadata comply with EDMC Data Documentation directive?**

No

**6.1.1. If metadata are non-existent or non-compliant, please explain:**

Missing/invalid information:

- 7.2. Name of organization of facility providing data access
- 7.2.1. If data hosting service is needed, please indicate

**6.2. Name of organization or facility providing metadata hosting:**

NMFS Office of Science and Technology

**6.2.1. If service is needed for metadata hosting, please indicate:****6.3. URL of metadata folder or data catalog, if known:**

<https://www.fisheries.noaa.gov/inport/item/46886>

**6.4. Process for producing and maintaining metadata**

*(describe or provide URL of description):*

Metadata produced and maintained in accordance with the NOAA Data Documentation Procedural Directive: [https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC\\_PD-Data\\_Documentation\\_v1.pdf](https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-Data_Documentation_v1.pdf)

**7. Data Access**

*NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.*

**7.1. Do these data comply with the Data Access directive?**

Yes

**7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?**

**7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:**

**7.2. Name of organization of facility providing data access:**

**7.2.1. If data hosting service is needed, please indicate:**

**7.2.2. URL of data access service, if known:**

[ftp://ftp.soest.hawaii.edu/pibhmc/website/data/amsamoa/benthichabitatlayers/ROS\\_BHM\\_ALL.zip](ftp://ftp.soest.hawaii.edu/pibhmc/website/data/amsamoa/benthichabitatlayers/ROS_BHM_ALL.zip)

**7.3. Data access methods or services offered:**

Data can be accessed online via the Pacific Islands Benthic Habitat Mapping Center (PIBHMC) website at <http://www.soest.hawaii.edu/pibhmc/cms/data-by-location/american-samoa/rose-atoll/rose-atoll-habitat/>.

**7.4. Approximate delay between data collection and dissemination:**

Unknown

**7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:**

## **8. Data Preservation and Protection**

*The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.*

**8.1. Actual or planned long-term data archive location:**

*(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)*

OTHER

**8.1.1. If World Data Center or Other, specify:**

**8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:**

**8.2. Data storage facility prior to being sent to an archive facility (if any):**

Pacific Islands Fisheries Science Center - Honolulu, HI

**8.3. Approximate delay between data collection and submission to an archive facility:**

Unknown

**8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?**

*Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection*

University of Hawaii School of Ocean and Earth Science and Technology, NOAA IRC and NOAA Fisheries ITS resources and assets.

**9. Additional Line Office or Staff Office Questions**

*Line and Staff Offices may extend this template by inserting additional questions in this section.*